

CANADA
DEPARTMENT OF MINES AND RESOURCES

MINES AND GEOLOGY BRANCH

NATIONAL MUSEUM OF CANADA

BULLETIN No. 106

BIOLOGICAL SERIES No. 34

THE 1945 STATUS OF THE PRONGHORN ANTELOPE,
ANTILOCAPRA AMERICANA (ORD), IN CANADA

BY

A. L. Rand



OTTAWA
EDMOND CLOUTIER, C.M.G., B.A., L.Ph.,
KING'S PRINTER AND CONTROLLER OF STATIONERY
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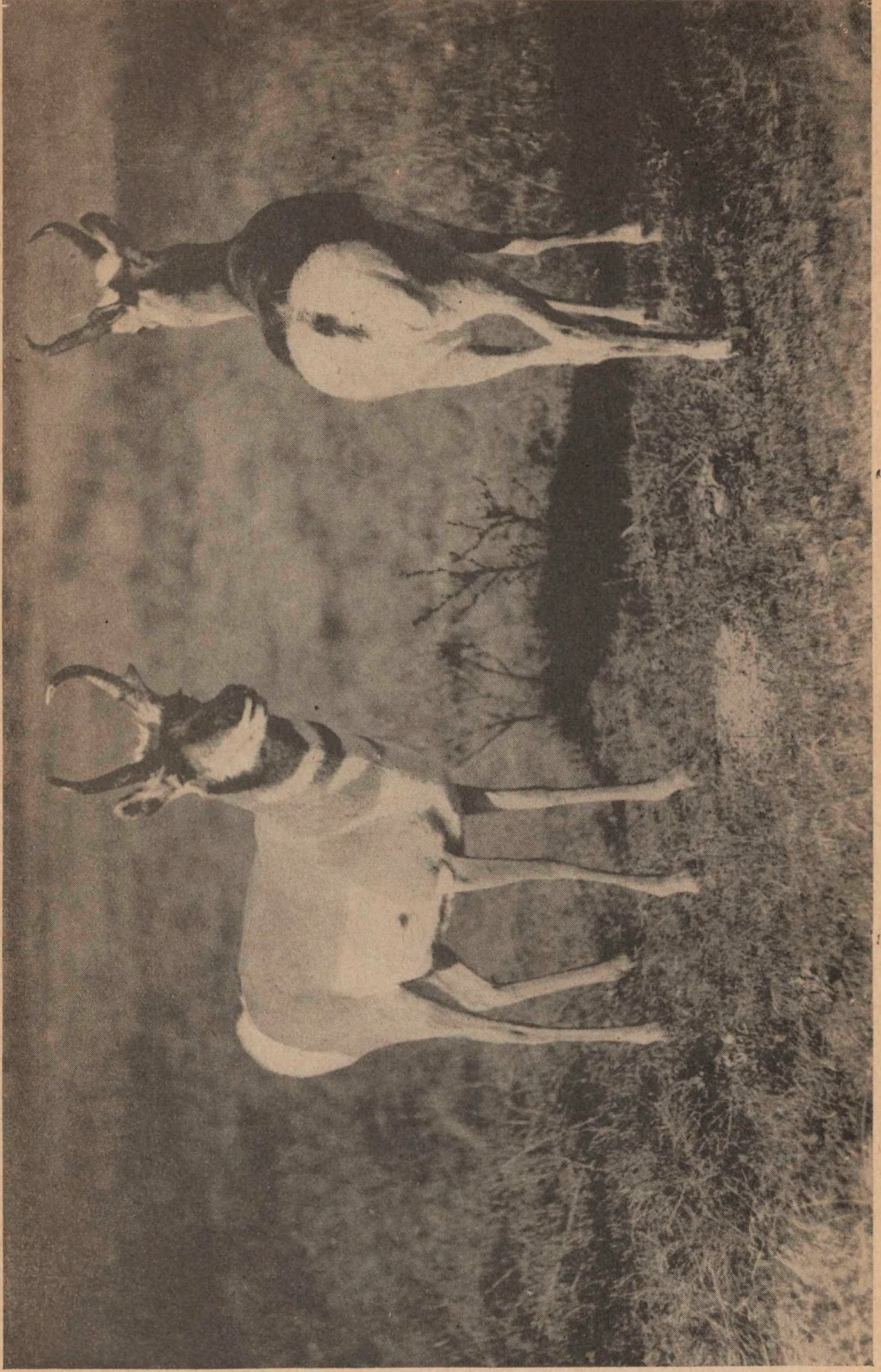


Figure 1. Two antelope bucks. (Courtesy National Parks Bureau.)

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THE 1945 STATUS OF THE PRONGHORN ANTELOPE, *ANTILOCAPRA AMERICANA* (ORD), IN CANADA

INTRODUCTION

The pronghorn antelope, *Antilocapra americana* (Ord), is an animal of the western plains of North America, from Canada to Mexico (See Figure 2).

It has no close relatives and is the sole living representative of a family that flourished in earlier geological periods in North America when many related species were present. No fossils of this family have been found outside America (Scott). The most striking peculiarity of the pronghorn antelope is its horn structure. The horns are composed of a solid, persistent, bony core, over which is a horny sheath that is deciduous and is shed annually.

In size the male reaches a length of about 52 inches, stands about 36 inches high, and weighs about 100 pounds; females usually smaller (Seton). In colour the pronghorn is tan and white, with black areas on the head (See Frontispiece). They are beautiful, graceful animals of the plains that seek safety in flight and may attain a speed of over 40 miles an hour.

The present day range is from southeastern Alberta and southwestern Saskatchewan southward (Figure 3).

In the early days antelope abounded on the prairies of both Canada and the United States. Shortly after the beginning of the century they were almost on the verge of extinction; since then they have recovered in numbers and are now fairly numerous. In order to have a reliable, detailed estimate of present day conditions the Department of Mines and Resources authorized A. L. Rand, of the National Museum, to make a survey of the antelope in Canada.

Casual observations on antelope were gathered in June and July 1945, while in antelope country on work for the National Museum, and the period September 18 to October 15 was devoted entirely to an antelope survey. The Alberta Government, through the Fish and Game Commission, co-operated by placing a car and a game official at Rand's disposal for the period September 18-27. The Saskatchewan Government co-operated by supplying him with officials who knew the terrain, for the periods October 1-5 and 8-10.

A large part of the antelope range was covered, either personally or through reports from persons who knew it, and the accompanying report contains the pertinent information. Much of the information is of necessity second hand, and Rand is indebted to the many people who are mentioned later for their time and trouble in supplying this information.

In the present report the details of the information obtained are given fully, so that it will be possible in future to evaluate it, and to compare other reports obtained by different methods.

HISTORY

The former abundance, the decline, and the recent status of the antelope in Canada have been briefly summarized a number of times, notably by Hewitt 1921, Nelson 1925, Seton 1929, Anderson 1924, 1933, and 1938, and Allen 1942.

In Canada, in early days, antelope range extended northeast to southern Manitoba, in Saskatchewan north to Carlton House, and in Alberta northwest to near Rocky Mountain House. Then antelope swarmed on the plains, more

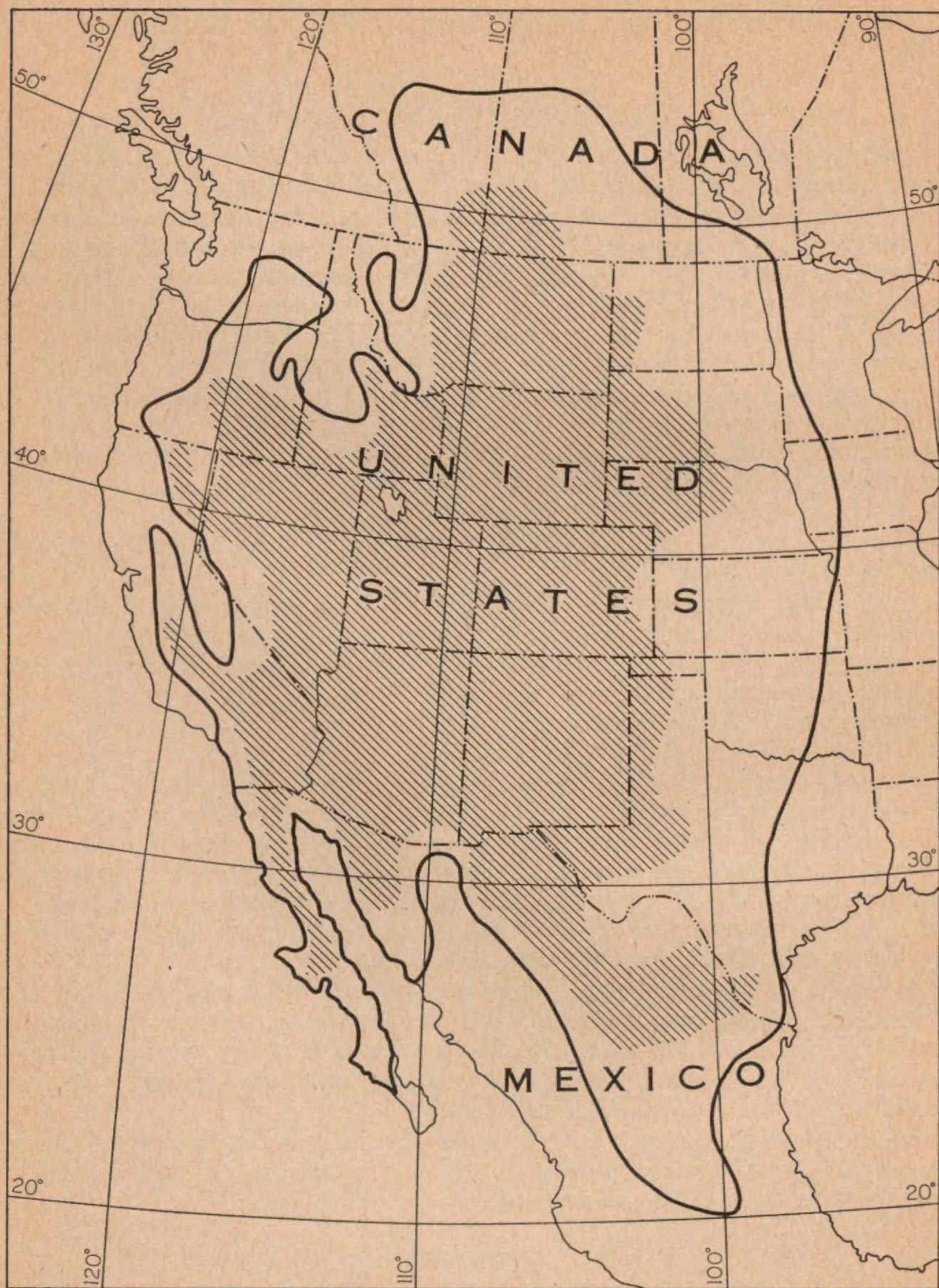


Figure 2. Antelope range, past and present; the black line represents the original range, the shaded part the range in 1924 (from Nelson 1925).

common than the buffalo. Up until 1906 it was still common, according to Blazier (in Seton) and from general report. Mr. G. R. Sexsmith of Regina, who came into southern Saskatchewan and Alberta in 1913, writes that it was commonly reported that previous to the winter of 1906-07, antelope were common on the plains like bands of sheep (letter G.R.S. to A.L.R., Nov. 14, 1945). Similar information was given by Mr. George Armstrong, rancher in the Cypress Hills, from personal memory, and by Mr. John Linder of Govenlock. Mr. V. W. Heydlauff of Wildhorse also spoke from memory of the abundance of antelope immediately previous to 1906-07.

The winter of 1906-07, still known as the "hard winter" in southern Alberta and Saskatchewan, was a disastrous one for antelope. Blazier writes, "The last of the big herds that used to be seen, even after the province [Alberta] started settling up, went south in the winter of 1906-07, the original year of the blue snow. They started south with a blizzard behind them, and just kept going. Lots of them died on the way, and the rest never did come back in large numbers" (in Seton, 1929, vol. 3, pt. 2, pp. 450, 451).

Sexsmith writes that in the winter of 1906-07 antelope were said to have perished in hundreds along the Canadian Pacific Railway main line fences, and over steep banks of rivers and in coulées, and their numbers have never again approached what they were previous to that time.

Mr. John Linder of Govenlock, speaking of a ranch just south of the Cypress Hills in Saskatchewan, said there were about 600 antelope about one ranch that winter [1906-07] and he thought all of them died.

Mr. V. W. Heydlauff of Wildhorse, whose experience of this area goes back to nearly 1900, said that in the winter of 1906-07 most ranchers lost one-third to one-half of their cattle and that most of the antelope also perished.

The period immediately following was one of great antelope scarcity. Mr. Heydlauff in 1907 travelled widely in southeast Alberta, north to the Cypress Hills and west to Manyberries, and said he knew of only 7 live antelope in this area (an area in which bands of 500 to 1,000 have been reported commonly in recent years).

The recovery in antelope numbers was very slow. Sexsmith's letter gives the following details of those encountered in 1913 in his extensive travels: a few (10 to 15) north of Leader on South Saskatchewan River; a small group (20 to 30) in the Great Sand Hills north of Maple Creek; a few (15 to 20) in the country from Govenlock east to Val Marie; and in 1916 a few (5 to 7) just north of Admiral (about tp. 8, rge. 15, W. 3rd mer.).

Sexsmith continues that up until about 1920 he considered the antelope as almost extinct. Then about 1924-28 they increased considerably.

In 1919 Hewitt estimated the total antelope population in Canada as 3,000 animals; in 1924 Anderson puts the figure still lower, at about 1,400 animals; and Nelson in 1925 puts the figure at 1,327 animals. The differences between these figures probably represents differences in estimates rather than in changes of antelope numbers. In 1933 Anderson estimated only 2,400 antelope in the Dominion.

By 1935, according to Sexsmith, antelope had become numerous, and Anderson's estimate in 1938 that about 15,000 animals were in Alberta, with no reliable estimate for Saskatchewan, reflects this trend. Though antelope had increased greatly by the mid 1930's they suffered a severe though local setback.

Mr. H. Hargrave of Manyberries spoke of the hard winters of 1935-36-37 in the Manyberries area, during which many antelope went south into Montana, never to return, and others perished on their range. Floyd Natress of Medicine

Hat was travelling in this area in the winter of 1935-36 and reported antelope plentiful but very weak and many dying. In the Wildhorse area it was the same, for Mr. V. W. Heydlauff spoke of 1935-36 being a hard winter. At one time during that winter he estimated 3,500 antelope on his ranch. A storm took them south into Montana; none came back; and the next year they were scarce. Mr. G. Hillock of Maple Creek also spoke of hearing of thousands dying in the Wildhorse area during a severe winter in the 1930's, presumably that of 1935-36. That this condition extended east to Govenlock is indicated by Mr. A. McRae's statement concerning the weakened condition of antelope wintering in that area, and it apparently extended west to Nemiscam, according to Mr. E. Mathews.

That this antelope setback was local is indicated by the fact that Mr. Jack Orr of Suffield, who has hunted coyotes over the Medicine Hat-Brooks area since 1930, in some of the best antelope range, had seen no evidence of any great mortality; nor had Mr. Alex Bain of Buffalo.

The antelope population quickly recovered from the setback received in 1935-36 in the Manyberries-Wildhorse-Govenlock area, and the reports from most of the antelope range are almost unanimous in claiming marked increase in the last 5 or 6 years.

The notable exceptions are: South Saskatchewan River from Empress eastward; and the Nemiscam area, where antelope are said to be decreasing.

The present estimate of known antelope populations in Canada is put at 30,906 animals in 1945. This is not an estimate of the total population, but the sum of estimates of the various populations on which Rand was able to secure information he thought reliable (See details, pp. 17-34).

Antelope range is less extensive than it was originally; in Alberta, the Wintering Hills, Sullivan Lake, and Kirkpatrick Lake north of Red Deer River mark its extreme northern limits; and Milk River Forks about its western limits; in Saskatchewan, the northern limit is apparently just north of South Saskatchewan River, and the eastern limit is just west of Wood Mountain. It is improbable with the change in land use, the turning of prairie into wheat field, that a return to original numbers on original range is possible or even desirable. But it seems evident that the animal is common, and promises to continue so, on the range lands of Alberta and Saskatchewan south of Red Deer and South Saskatchewan Rivers.

To summarize the above: until 1906 antelope were common; in the winter of 1906-07 antelope almost disappeared from Canada. Their recovery was slow. Not until the 1930's did they become plentiful anywhere. In 1935-36 a severe local setback occurred, but recovery was quick, and since then antelope have increased steadily over most of the country suitable for them. Certain parts of their original range are probably permanently withdrawn from their occupancy, but a large area is still open to them and on this they are thriving.

SUMMARY OF PRESENT ANTELOPE POPULATION

The status is given area by area, corresponding to the numbered areas on Figure 3. It is given in detail in the appendix, pages 17-34, but is recapitulated in condensed form here for convenience.

Area	Reported status	Estimated population
1. South of Milk River.....	Good, increasing.....	4,500
2. Milk River Forks.....	A marginal population.....	100
3. Sevenpersons-Nemiscam-Lucky Strike.....	Doubtful, probably decreasing.....	1,000
4. Bow-Oldman Rivers.....	Doubtful, probably decreasing.....	1,000
5. Cypress Hills, Alta.....	A marginal population.....	35
6. Manyberries-Wildhorse.....	Good, increasing.....	5,000
7. Elkwater-Hilda.....	120
8. Suffield-Brooks-Bassano.....	Good, constant.....	8,000
9. North of Red Deer River.....	Increasing?.....	2,000
10. Bitter Lake.....	30
11. Bigstick Lake.....	Increasing.....	1,500
12. Empress-Alsask.....	Decreasing.....	85
13. South Saskatchewan River.....	Doubtful.....	?
14. Maple Creek-Walsh-Cypress Hills.....	Increasing.....	1,000
15. Maple Creek-Piapot-Cypress Hills.....	Marginal population.....	36
16. Cypress Hills-Val Marie-Govenlock.....	Increasing.....	5,000
17-20.....	No good recent data.....
21-23.....	Few or no antelope at present.....
Total estimate.....		29,406

The actual number of antelope may be more. This report should be considered as an index to population, rather than a census, and the appendix indicates how it is built up.

FUTURE PROSPECTS

Even without man's influence no animal is secure, as witness the many species of pronghorn antelope that have become extinct in Miocene to Pliocene times.

The recent species is thriving and increasing under present conditions.

So long as conditions remain as they are, the pronghorn will probably continue to increase, and it may become necessary to institute some control. Most persons on the antelope range are kindly disposed toward it and it would be foolish to jeopardize this attitude by allowing the pronghorn to become a nuisance.

However, there is one factor, beyond human control, that may bring antelope to the verge of extermination, as it has done in the past. This is weather.

FACTORS AFFECTING ANTELOPE

In many aspects of habits, and habitat requirements, the antelope differ greatly from any other of the big game of Canada, and it is necessary to consider them in order to understand antelope vulnerability to some conditions, and how it survives.

HABITAT

The antelope is an animal of open country, of the plains and also of the more broken country of badlands and river breaks. However, in the Great Sand Hills country in Saskatchewan, north of Bigstick Lake, numbers of antelope live in

the brush country about the edge of the sandhills. In the Cypress Hills country in Alberta antelope occasionally venture into clearings in the forest on the tops of the hills. Though the presence of buildings and cultivation are not shunned by antelope, and antelope come into fields of grain and feed, still the antelope are commonest where settlement is least common, as may be seen by comparing the map showing antelope abundance with the map showing agricultural development.

Antelopes migrate in the autumn and winter, and their winter ranges are more restricted. The data on habitats preferred in winter were somewhat conflicting.



Figure 4. Antelope habitat; the valley of Lost River and the arid plains north of Milk River near the Dominion Range Station in southeast Alberta.

The survival of antelope appears to be most precarious on the wintering grounds, and their needs there require investigation. Presumably wintering areas are those where food is available, due to low snowfall, to areas being blown free of snow, or to the snow being melted by warm chinook winds.

Although many observers stressed the importance of rough, broken country for antelope wintering grounds, such as river breaks and coulée country, others said antelope stayed out in the open flats all winter. Local conditions may modify this.

SEASONAL CHANGES

Flocking or Banding

The antelope are in small bands in the summer, in the autumn the bands increase in size, and in the winter the bands gather together in large herds.

In 1945 Rand was told that these summer bands were commonly composed of 4 to 5 animals, and his observations supported this. In June, in the Brooks area, he saw antelope on seven occasions; only one of these was a lone male, the others were of bands varying in size from 2 to 10 animals. In July, in the Cypress Hills-Wildhorse area, of some forty-one different occasions on which antelope were seen, twenty of these were records of lone males, the other twenty-one of bands containing from 2 to 11 animals, with one band of 19 animals.

In September the bands seen by Rand were still small; in the Brooks-Suffield area on September 23 nine bands were seen, varying in size from 3 to 9 animals, just after a heavy snowfall. Other observers reported that this storm caused antelope to gather into large bands. Mathews reported that in Nemiscam Park the animals there banded together into one band of 30. Hanson of Arena, Saskatchewan, reported a band of 150 seen in his area, and Bain of Buffalo, Alberta, reported a band of 60 seen near Oyen, Alberta. Ridley said that in the Milk River country antelope were grouping into bands of 25 to 30 animals.

However, in October most of the bands of antelope were still small; in the area south of the Cypress Hills in Saskatchewan, October 2-4, antelope were seen on twenty-one occasions; on seven of these there was only a single male; on thirteen others the bands numbered 2 to 11 animals, and on one occasion, indicating that the large bands were in the process of being formed, 60 antelope were seen in scattered groups about a flat a mile or so across.

On October 8, near Bigstick Lake, in an area a mile or so across, 63 antelope were seen from one vantage point. There were two isolated males, and the others, in the following sized groups, 5, 6, 25, and 25, were presumably the nucleus of a big winter band. Later that same day a solitary male and two bands, one of 8, the other of 9, individuals, were seen.

With the first severe storm in November the antelope bunch into bands of 100 to 150, according to Mr. Floyd Natress of Medicine Hat.

Apparently, information from various persons, the size of the winter congregation of antelope varies with the severity of the winter. With cold and deep snow the congregations are much larger. The past few winters have been mild for the most part and antelope have been well spread out over their range. This has given rise in certain quarters to the belief that antelope were scarcer than in some earlier years.

No winter observations were made by Rand, but he received many accounts of winter congregations that it is well to record as showing conditions in the most favourable parts of the range.

In the country south of Milk River near Pinhorn, Mr. C. R. Hulit of Milk River said that some years ago, in company with several ranchers and sheep men, he saw an enormous band of antelope that his companions estimated variously to contain from 800 to 2,000 animals.

In the Suffield area Mr. J. Orr said that one severe winter some years ago it was possible to see 5,000 antelope in a day, and the bands contained up to 500 animals. He said that in the winter of 1943 it was no uncommon sight to see bands of 300 to 500 antelope crossing the railway tracks within a few hundred yards of Suffield, and that in motoring from Suffield to Tilley on the trans-Canada highway one would be passing through a steady stream of antelope.

Along Red Deer River near Buffalo, Bain says he sees bands of 200 in winter.

In the Wildhorse area, from Cypress Hills to Wildhorse and Govenlock, bands of several hundred to a thousand are commonly reported by many persons, and at Willow Creek a band of 200 was counted in the winter of 1936-37, by Mr. C. Hogg.

Migration

There is a seasonal shrinkage in the antelope range in the autumn, and an increase in the spring through migration.

The antelope spring migrations of the past century into the North Saskatchewan River country, their autumn withdrawals into the South Saskatchewan River country, and their congregations in coulees and scattered places near Medicine Hat, have been mentioned by Seton.

But there are other wintering places, and migration routes, of greater or lesser extent, according to information given to Rand (for details See under status of populations, pp. 17-34).

Although there was general agreement as to wintering areas and migration directions by most observers, there was less agreement as to times of movement. Some reports said that the movements might occur at any time; others think there is a fairly regular autumn movement, with the spring movement irregular as to time; it is said that the severity of the winter influences the extent of the migration, in mild winters there being less of a withdrawal into wintering areas; and it was repeatedly claimed that a heavy storm might move a large antelope population many miles, in whatever direction the storm was moving.

The three main wintering areas are:

- (1) The country south of Milk River, with an irregularly timed migration, northwest and southeast in direction, mainly into Montana.
- (2) The Wildhorse area, to which animals come in the autumn from east, west, and north. Antelope in this area are said to be moved distances by storms, some of which take them into Montana, but some observers say the autumn migration is fairly regular; in a mild winter animals are said to winter much farther east; the longest antelope migrations, from the Val Marie area, some 100 miles, involve this area.
- (3) The Suffield-Tilley area, to which animals drift from the north and west. The severity of the winter is said to make a great difference to the amount of migration in this area.

Other wintering areas of some importance are the edge of the Great Sand Hills, to which antelope come from the north; and the banks of Red Deer River, to which animals come from the north and the south.

DESTRUCTIVE FACTORS

A review of the forces that tend to destroy antelope is essential if one is to conserve them, and the important aspects that have come to Rand's attention have been set forth and evaluated below.

Of these only two are important: weather, that may at any time wipe out the antelope, and which can only be offset by providing food regularly on certain wintering grounds; and settlement. This last has reached its flood, and is ebbing, and though responsible for a great decrease in antelope range historically, is no direct threat to our present day antelope population.

Weather

In the northern part of the antelope range bad winter weather is the worst enemy; deep, crusted snow that makes food inaccessible and robs the antelope of their speed; wet storms that cause chilling; and violent storms that move them out of their winter quarters never to return. Severe winters, as that in Montana in 1893, that of 1906-07 in Canada, and 1920 in Wyoming, may be disastrous for antelope (Seton). Fences tend to aggravate the effects of deep snow (Allen).

The following information bears out the importance of weather in reducing antelope populations in our area. Blazier's observations on storms in 1906-07 moving antelope out of the country never to return have been given under history (page 4); Mr. H. Hargrave also said the same thing happened in 1935-36 in the Range Station, Manyberries area; and Mr. V. W. Heydlauff told of an estimated 3,500 on his land in 1935-36 being moved out of the country by a severe storm, not to return.

The possible fate of some of these animals is indicated by a reported occurrence in Montana, where an estimated 900 carcasses were found where antelope had drifted into a deep ravine during the winter of deep snow and evidently had not the strength to get out (Seton). Mr. G. R. Sexsmith also writes of hearing of many perishing in coulees in southern Saskatchewan in 1906-07.

Deep snow and crusted snow rob them of their food, and they become weakened and die or are an easy victim for some predator. H. Hargrave spoke of antelope perishing on their range in the Manyberries area in 1935-36.

Floyd Natress of Medicine Hat, who has hunted coyotes extensively in southern Alberta, told of hunting in the area between Jaydot and Thelma, in the winter of 1935-36. The snow was deep, even on flat areas, and was drifted into the coulees. He travelled on skis, the snow being too deep to use a saddle horse in hunting. Cattle were dying of starvation on this range and there were about 1,000 antelope wintering in the area where he was hunting. The antelope seemed to be suffering more than the cattle. He found 30 to 40 dead antelope a day, dead apparently from starvation.

Mr. Hillock, Maple Creek, also spoke of hearing of hundreds dying in a winter of deep snow in the Wildhorse area in the late 1930's (undoubtedly the 1935-36-37 period).

Mr. John Linder of Govenlock, speaking of the winter of 1906-07, when he was on a ranch on the south edge of the Cypress Hills, said there were perhaps about 600 antelope about the ranch that winter, and he thought all of them died. There was, he said, 3 feet of snow, and many cattle died.

Mr. V. W. Heydlauff said that the thousands of antelope present in 1906 almost all starved in the following winter, during which most ranchers lost one-third to one-half of their stock; he himself started the winter with 300 and ended with 70 head of cattle.

Mr. George Armstrong, long-time rancher of the Cypress Hills area, also told Rand that it was the winter of 1906 that wiped out the antelope.

Mr. E. Mathews of Nemiscam says that in the winter of 1944-45, with a late heavy snowfall in that area, many antelope died. His son, riding from New Dayton to Nemiscam, a distance of about 50 miles this (1945) spring saw 20 dead antelope and not one live one. The carcasses had not been disturbed by coyotes, and were evidently winter killed.

In the fenced park itself the antelope suffered heavily; in the autumn there were about 100 in the park and this spring Mathews saw from 50 to 60 carcasses there. Some were undoubtedly the result of coyotes' kill, but that the snow and starvation were the important factors is indicated, as during most winters, with coyotes equally common, this mortality does not occur. As direct evidence Mathews told of 2 antelope caught by hand, in an extremely weakened condition.

The effects of weather perhaps vary locally. Mr. J. Cardinal, of Red Deer, says that in the Red Deer country bad conditions for antelope are those in which the snow comes down wet and freezes, covering all grass with a coating of ice. If the snow is deep and crusty, as well as a starvation effect the crust cuts the legs of the antelope and makes them an easier prey for coyotes.

Cpl. J. K. Ridley, R.C.M.P., Coutts, speaking of the broken country south of Milk River says that though coyotes are normally no trouble to antelope, when the snow is crusted and antelope break through and cut their legs, they are easier prey than normal. The important weather effect in this area he says is a wet snow that freezes on their fur. This causes death from exposure, and not starvation alone.

Mr. Jack Orr of Suffield, who has been a professional coyote hunter in that area since 1930, says he has seen no antelope perish from severe weather or from hunger there.

Settlement

Comparison of Figure 3, showing the abundance of antelope, and Figure 5, showing land use, indicates the striking correlation between antelope abundance and the settlement; where the former is abundant there is little of the latter. The antelope are animals of the rangeland.

Many persons told Rand that antelope come into cultivated lands; on growing wheat, grass, and flax damage was claimed, and they also go into stubble. But most persons with wide experience said that only occasional antelope, or small bands, drift into cultivated lands.

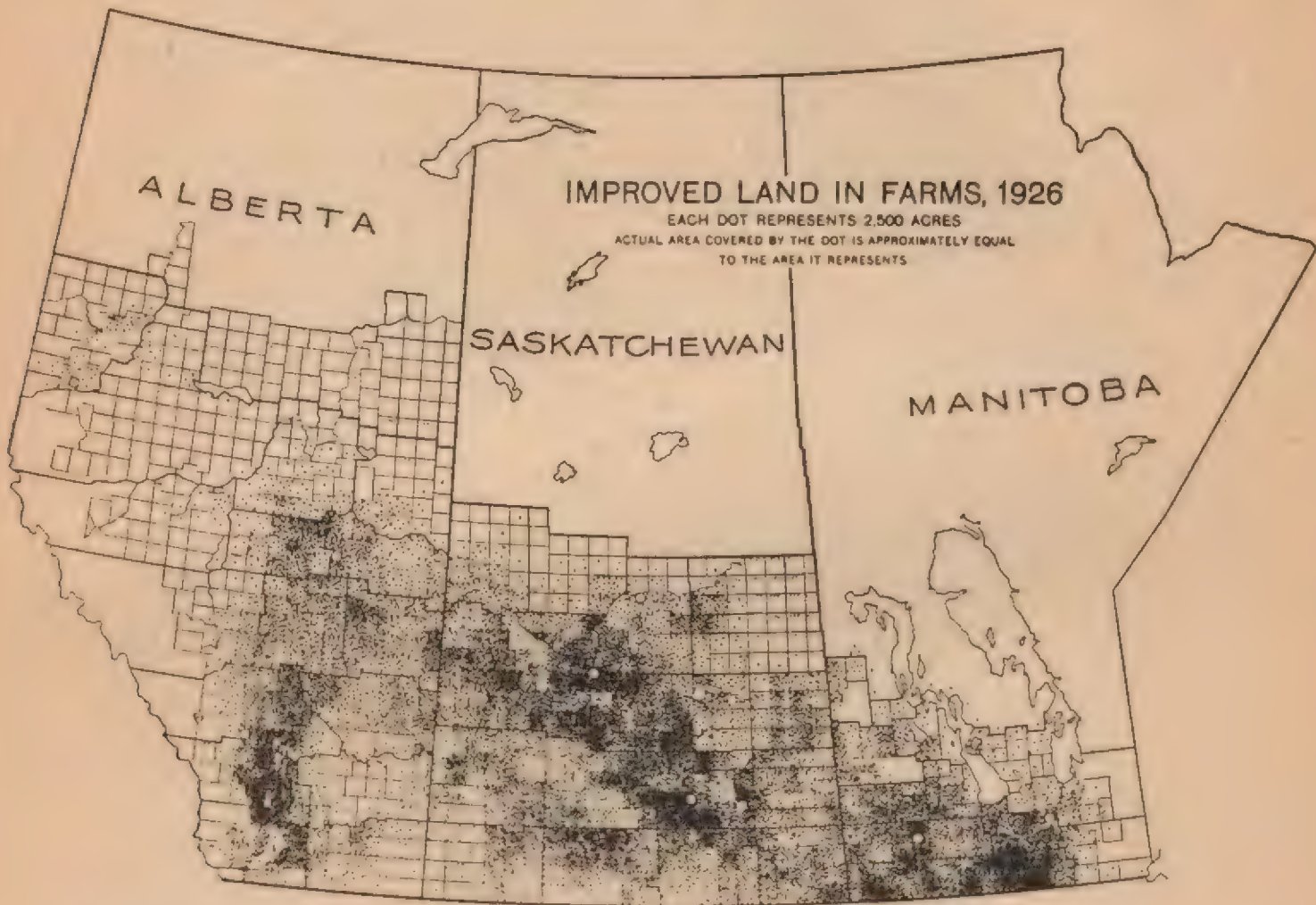


Figure 5. Map showing lands utilized in farms in the southern prairies, for comparison with the map of antelope range. Where farms are plentiful, we cannot expect antelope to become common (from *Agriculture, Climate and Population of the Prairie Provinces of Canada*, King's Printer, Ottawa, 1931).

In much of the area just west of Pakowki Lake, there is much rangeland that is antelope habitat, but it is interrupted by cultivated land and the antelope are not as common as might be expected.

It is possible that though antelope commonly visit the vicinity of isolated farms, the presence of much settlement may cause them to become scarce in an area even though adequate food is available on pasture lands there, and hunting not extreme. It may be a matter of a disturbance by human activity, or it may be a matter of an individual home range of hard prairie that needs to be larger than the pastures that are left. It may even be related to hunting pressure.

The prairie of the northern part of the original antelope range is now largely wheat fields, and it is doubtful if antelope will ever again range north to Carleton House and Rocky Mountain House in any numbers.

The rangeland of the south must be looked to as the home of the antelope, and there is one factor in present land use that may work to this end, the fact that in much of this submarginal area farms are being abandoned, and community pastures, under the aegis of the P.F.R.A. or by private enterprise, are being established. Thus, large pastures are maintaining areas of antelope habitat of sufficient size for their use.

Fences

Under normal conditions the 3- or 4-strand fences of the prairie are only slight barriers to an antelope. Unlike a deer, the antelope rarely leaps over a fence, but rather it crawls or slides through or under it, and this even at speed, with hardly a pause in its flight. Seton has suggested that in time, as the antelope becomes better acquainted with fences, it will learn to jump them, but this has not yet happened, and in 1945 Rand, in talk with ranchers, heard of only two such cases. Under adverse weather conditions, the slight added handicap of a fence may mean the difference between life and death to an antelope. The animals, already weakened, may be held in one place, vulnerable to starvation and predation. The written history of the species reveals such incidents, and Rand, in 1945, heard of others; of coyotes killing antelope that had drifted against a fence; and of antelope in bad weather, drifting against railway fences and perishing (See under sections headed "coyote", "weather", and "history").

Hunting Pressure

There is little doubt that determined hunting toward that end could exterminate antelope, but there is no such practice, and need never be. As elaborated under the term "weather", reason is shown that weather was probably the main factor in the striking antelope decrease in 1905-06, a decrease from which the antelope have only recently recovered.

Hunting seasons have been opened for antelope in Alberta since 1934, with a bag limit of one or two animals, and in Saskatchewan there have been open seasons for some years. The antelope have increased steadily in most areas under this hunting.

Apparently the antelope is well able to withstand the usual hunting pressure in Alberta and Saskatchewan.

However, it should be kept in mind that causes other than hunting may be catastrophic for the species. It must be watched with this in view, and if diminution of numbers should occur, it may be necessary to reduce hunting pressure.

Time of Open Season. As regards time of open season it appears that antelope normally gather into big bands with the first November storms and drift into heavy concentrations on their winter quarters. They are obviously most vulnerable then, and deep snow increases this vulnerability. Jack Orr of Suffield tells me that late in the autumn, when the antelope are in bands of hundreds, they are more easily killed. Then when alarmed or shot into they may not make off, but may mill about, allowing additional shots to be fired into the band.

Thus an open season extending later than October increases antelope vulnerability.

Number of Hunters and Kill. The following data from reports issued by the provinces are available on the number of persons that hunt antelope, and the kill:

Alberta		1943	1942	1938	1937
Resident licences.....		370	397	375	255
Non-resident licences.....		19	13	4	13
Free licences.....				125	292
Animals reported killed.....				161	243

Saskatchewan	1943	1942	1941	1940	1937	1936
Licences issued.....	348	357	543	432
Animals reported killed.....			395	226	154	257

There is perhaps an unreported kill equal to that of the recorded kill.

In earlier days when Indian camps on the plains numbered upwards of five hundred tepees, and the Indians were depending on hunting for their meat, undoubtedly antelope were hunted. Blazier (quoted in Seton) speaks of breeds during an antelope migration killing all the antelope that managed to make a certain crossing on Red Deer River. Alex Bain of Buffalo told Rand of breeds hunting antelope and following large migrating bands. However, such things no longer happen. Antelope are now hunted almost exclusively for sport. The scant rural population in Alberta (average 1.8 persons to the square mile according to the *Canada Year Book*, and the antelope range is in some of the least heavily populated areas) ensures that the local hunting pressure is slight. Although many of the antelope hunters listed above live outside the antelope range, hunters from outside the province are few (*See above*), and it is improbable that hunting pressure will increase greatly.

Under present conditions and hunting regulations antelope can increase and thrive.

Coyotes

Allen (1942, p. 327) in the most recent summary of the antelope question mentions coyotes, wildcats, and formerly wolves as the most important natural enemies. Seton (p. 449) included the eagle.

Of these only the coyotes need to be considered, as wolves are about extirpated in the antelope range in Canada, and eagles and wildcats are scarce. The coyote is common.

Most persons interviewed said that coyotes killed a few antelope, but none of them thought the coyote an important predator on wild ranging antelope and several spoke of the antelope fighting off coyotes.

That antelope weakened by starvation are an easy prey is indicated by the following account.

At Govenlock, Mr. A. McRae says that in the 1930's (probably 1935-36) one winter about 500 wintered on the flat along the creek by the town of Govenlock. It was a winter of deep snow. The antelope were so weakened by hunger, and their speed so reduced by the snow, that the dogs of the town got into the habit of killing them.

Mr. E. Mathews of Nemiscam told of incidents in the Nemiscam area, in winters of deep snow, when two dogs caught an antelope, and of two antelope in such a weakened condition as to be caught by hand by his son.

Not only deep snow, but crusted snow through which the antelope break and cut their legs, weakens antelope and makes them easy prey, according to Cpl. J. Ridley of Milk River area, and Mr. J. Cardinal of Red Deer River area.

Mr. E. Mathews of Nemiscam said that the reduction of antelope within the Nemiscam Park in the winter of 1944-45 from about 100 to about 19 was due in part to coyote predation. He told Rand of following tracks that showed where a coyote had driven an antelope into the deep snow and then killed it; he also said that probably the coyotes were able to take advantage of the antelope-proof park fence and the weakened condition of the animals. Antelope are notoriously vulnerable to predation when under fences, especially under conditions of deep snow (*See Allen, 1942, p. 327*). The following information from Mr. J. Orr of Suffield also shows the effect of snow and fences. A section man told Orr that many years ago when there was about 2 feet of snow, with a crust, a group of 8 antelope drifted into a fence corner along the railway, and stayed there though coyotes found them, and in 5 days all 8 were killed and eaten by the coyotes.

That coyotes also take advantage of the deep snow to kill antelope on the open range is indicated by Mr. A. Bain of Buffalo. He said he never saw a coyote kill an antelope, but had seen a number of carcasses with tracks to show that coyotes had run the animals into the deep snow and killed them. Presumably antelope would be especially vulnerable in broken country where snow accumulates in coulees.

However, an observation by Mr. Jack Orr of Suffield indicates that deep snow is not always necessary for coyotes to kill antelope. About 1938, when there was only 6 inches of snow, and a temperature far below zero, he was hunting coyotes about 25 miles southwest of Suffield, and saw a band of about 300 antelope milling about. Through a break in the milling band he saw a coyote holding an antelope by the throat and another coyote sitting nearby, watching. Orr shot the coyote that had seized the antelope, but the latter also died. The 6 inches of snow would have been only a slight hindrance to the antelope in escaping:

Several points, including the milling antelope, the presence of the second coyote, and the antelope's well known curiosity, make one wonder if some sort of tolling had been practised by the coyotes.

On another occasion Orr shot a coyote that was following a wounded antelope buck that had one hind leg broken about a foot above the hoof. Later in following the tracks he found the coyote had run the antelope for about 12 miles.

Several observers related incidents that indicate the coyotes do not always kill antelope with impunity. Mr. Orr, one spring, saw a coyote chased some distance by a big male antelope, and Mr. Bain said that on two occasions in the spring, one of them in 1945, he had seen a female antelope chase a coyote. The antelope did not seem to be really trying to catch the coyote and finally gave up the chase.

That coyotes are sometimes caught and killed by antelope is indicated by Cpl. J. Ridley of Coutts, who said he had been told of several coyote carcasses, apparently cut to pieces by the hoofs of antelope.

We can assume that coyotes under normal conditions are of little importance as antelope predators. Under certain conditions of deep snow they may kill some (they probably kill some kids though I have no evidence of this) and that under the combination of snow and fences, they may kill many, forestalling slower death-dealing factors.

Fires

After exceptionally wet years, when the prairie vegetation had grown dense, prairie fires were fierce and widespread. With the interruption of great sweeps of prairie by ranches, and the ranchers, from self interest, guarding against fires they are likely to be small.

Whatever their rôle in the past, at present fire is probably a minor item in antelope ecology.

However, with antelope under fence, and their mobility reduced, it should be kept in mind that prairie fire is a hazard, both directly and through its destruction of feed.

The following data were secured on fire affecting antelope.

Orr at Suffield said that many years ago (about 1927) he saw many antelope, the numbers perhaps running into several scores, singed and some of them blinded by a prairie fire. Such a fire, he said, occurs only after an exceptionally wet year has given a dense growth of prairie grass.

Capt. S. W. Gilfoy, Adj., Experimental Station (British Block) Suffield, said that on the British Block in recent years a few fawns were perhaps destroyed by prairie fire, and two were picked up that might have been injured in that way.

DAMAGE CAUSED BY ANTELOPE

There are two extremes of attitude toward wild life. One was put forward by Mr. W. Hyam of Claydon, who said that anything that eats does damage to a farmer, and that the antelope were destroying his wheat and were pulling up his fence posts. The other extreme was the attitude of many ranchers—the antelope may eat a bit of grass or grain, but when things get so bad that they have to worry about what an antelope eats they don't want to continue ranching.

In the Eastern Irrigation District, with crops raised in antelope country, Mr. W. Crooks said they did no appreciable damage. In the Medicine Hat area the R.C.M.P. had had only one complaint in 2 years; a complaint by Mr. Heidinger on Sept. 7, 1945, that on 100 acres of his wheat on sec. 8, tp. 9, rge. 6, W. 4th mer., there were 75 to 100 antelope, and they had been there for a month.

Mr. Brontzki of Consul, Saskatchewan, who farms two sections in tp. 4, rge. 28, W. 3rd mer., said antelope were causing him great damage, eating everything he grows, such as flax, barley, and wheat, and tramping down more by playing in it.

Mr. Mathews of Nemiscam said that farmers thereabouts occasionally complained of the damage to crops by antelope, but he had on occasion seen antelope walking through his wheat crops, nipping a bit here and there without doing appreciable damage. He also said that Mr. McHugh, who ranched near Nemiscam, liked to have antelope about, even though they fed on his alfalfa, but when the place changed hands recently, the new owner at once complained of the antelope eating his grass.

Mr. Hanson, in charge of the P.F.R.A. pasture south of Arena, said antelope were very fond of crested wheat grass, and on the planted areas on the pasture there one could see 1,000 in the spring. Nearby farmers also complained about the antelope.

Some observers claimed that antelope shunned planted fields and stubble, whereas others said they did not. Certainly they do go into growing crops. Most persons said they were dainty feeders and the damage they did was slight. However, the case of Mr. V. W. Heydlauff, Wildhorse, appears to be an exception. He grows registered alfalfa for seed and claims that antelope eat so much of the plants, nipping at the tops, that some years crops are ruined. He told Rand that of the 150 acres planted in 1945 he would be able to thresh only 15 acres, and in October showed Rand fields of alfalfa from which the tops had certainly been eaten until harvesting for seed was out of the question. He said he had seen 500 antelope on a 100-acre field in August and September, and in former years had had as many as 3,500 antelope wintering on his place.

His protective measures were a 4-strand barbed wire fence, and frequent patrol of his fields with dogs, and these he said were ineffective.

Many other persons were of the opinion that there was a case of real antelope damage, and corroborated his statements as to the number of antelope.

The only logical treatment of this exceptional condition is to fence with sheep wire.

However, Constable Wilson, R.C.M.P., said that in his 1½ years in the Manyberries area Heydlauff's complaints were the only ones he had received, and that in his 6 months in the Foremost area he had received no complaints of antelope causing damage.

The charge that antelope pull up fence posts or pull off the wire from fence posts was supported by few people and can be disregarded, but Mr. Hyam of Claydon said the antelope crawling under fences, lifted up the posts. Mr. A. McRae said that he thinks antelope sometimes caught their horns under a strand of wire and pulled the wire loose when they backed out.

There is no doubt that antelope use some grazing that could go to support cattle, and are direct competitors. However, I rarely heard this put forward against the antelope. Champion said that just south of the Cypress Hills some farmers complained at supporting 1,000 antelope on their land over winter, and Natress told me that in the winter of 1935-36 when cattle were dying of starvation in the Thelma-Altawan area a rancher complained that if there were fewer antelope, the cattle would have a better chance.

VALUE OF ANTELOPE

One of the pleasantest features of this antelope study was the attitude of most of the ranchers. They like to see the antelope about and do not begrudge what they eat.

The antelope has a slight value as food (an ordinary buck weighs about 100 pounds according to Seton).

It has an æsthetic and recreational value as well for those who enjoy the sight of wild game or take pleasure in hunting it with gun and camera (Allen 1942, p. 328).

As a last representative of a peculiar American group that flourished in the Miocene and Pliocene, and as a denizen of the scantily populated plains where few other wild animals can survive, it intrigues one's imagination.

REFUGES AND PARKS

There is only one formal antelope preserve in Canada at the present time: Nemiscam National Park. This park, of about 5,000 acres, is a few miles north of Nemiscam Station in southern Alberta. It includes smooth prairie, and the junction of Chin and Fortymile Coulees. It is in an area of much wheat farming. It was selected in 1922, and 42 animals were enclosed in an antelope-proof fence. They increased to 180 animals in 1923; to 235 in 1925 (Seton 1928). In the autumn of 1944 Mr. E. Mathews, in charge of the park, estimated about 100 antelope on it. In the spring of 1945 he said there were 19; and in the autumn of that year there were 30.

Many grazing leases are opened to hunting only with the consent of the persons using them, and in 1945 some of them were closed to hunting. These are, or could be, antelope refuges. The Eastern Irrigation District is closed to antelope hunting and there is no access to the British Block. At the present time there is no antelope hunting allowed in the Bigstick Lake area. Thus the antelope is well supplied with refuges.

APPENDIX

The following details, listed by areas numbered to correspond with the numbered areas on the attached map (Figure 3), give what Rand was able to gather as to antelope populations. He has used his discretion and sorted out some information, but most of what he received is incorporated.

*Area 1**South of Milk River*

Estimated population	4,500 antelope
Estimated area	360 square miles
Status	good, increasing

This rough broken ranchland, east of Coutts and south of Milk River, was reported by all informants to be well stocked with antelope.

Rand got most of his information from interviews with Mr. A. J. C. Daniel, Provincial Game Officer at Lethbridge, in whose territory this area lies; Dr. G. N. Giles and Mr. C. R. Hulit of the town of Milk River; and Cpl. J. K. Ridley, R.C.M.P., stationed at Coutts.

Detailed information is given below.

Daniels says the Aden-Groton country is favourite antelope range.

Ridley, who has patrolled that country for 2 years, gives the following estimate of the September population.

A. In Police Coulée and Rocky Coulée (tp. 1, rge. 13)	75
B. North of St. Kilda where Deer Creek flows into Milk River (tp. 1, rge. 12)	35
C. North of Knappen, about Black Coulée (Miners Coulée on maps) (tps. 1, 2, rge. 11)	75
D. Aden-Pinhorn country (tps. 1, 2, rges. 8-10)	1,500
E. East of Pinhorn, in the bend of Milk River (tp. 1, rge. 5, to tps. 1, 2, rge. 8)	3,000

Giles also spoke of the abundance of antelope in the Aden area.

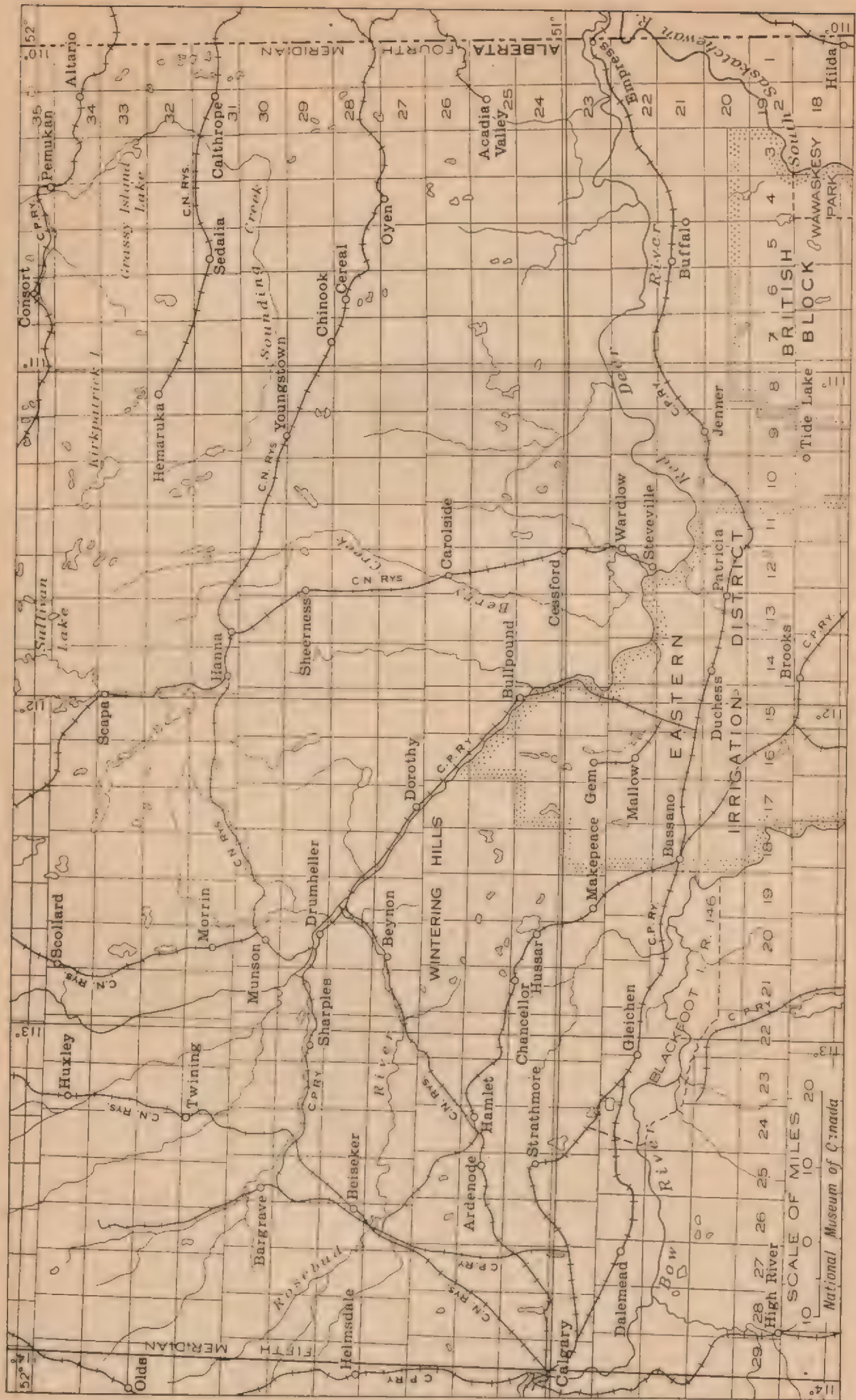
Hulit who has ridden this area says some years ago in December he was in company with several sheep and cattle men in the Pinhorn area when they saw a band that was estimated by the various individuals as between 800 and 2,000 animals.

Total estimate 4,500 antelope.

We have no data on the history of this population. Ridley who has patrolled this area for 2 years says the status is good, and that though last year he saw many dry does, this year many of the females had young. In December 1945 he writes that he saw two bunches of 200 animals in this area, and they have increased over last year.

Ridley had considerable information on migration. According to him, the antelope movements tend to be in a southeast-northwest direction. He said that old timers had a theory that this was correlated with there being no antelope in the country at an earlier period; that they came into the country from the southeast; and that present migration routes follow their invasion route. According to Ridley, the antelope movements set out below are not seasonal, but seem to occur at any time throughout the year. The Knappen-Black Coulée population is reported to move north sometimes into the Birdsholm area; the Aden-Pinhorn population sometimes moves perhaps 50 miles southeast into the area between the east and west butte of the Sweet Grass Hills in Montana, U.S.A.; and the population east of Pinhorn is said to move at times into the country towards Havers, Montana.

Hunting Pressure. This area is generally very difficult of access and little hunting is done there.



Ridley in 1944 heard of only 20 antelope shot in this area, and sold 6 resident and 4 non-resident licences. In 1945 at Coutts 45 licences were issued to residents, and Ridley estimates 40 animals were killed south of Milk River.

Area 2

Milk River Forks, Alberta

Estimated population	100 antelope
Estimated area	250 square miles
Status	doubtful

This area about the forks of Milk River and on Milk River Ridge is said to have a few antelope on the big ranches.

Informants were the same as those for the area south of Milk River, Area 1. Detailed information follows.

Daniel says a few range westward to past Twin River (tp. 1, rge. 20) and to near Del Bonita (tp. 1, rge. 21), which is mostly ranchland.

Giles says that in the autumn of 1944 he saw about 30 on Mackie Creek, where they usually occur west of the forks on Milk River Ridge (tps. 2, 3, rge. 19), and that a few, perhaps 15 or 20, occur in the country about Milk River Forks and southward (in tps. 1, 2, rge. 18). Hulit says there are about 100 antelope in the same area, mostly on tps. 1, 2, rge. 18, with a few on tp. 3, rge. 18.

However, Cpl. Ridley writes (letter J.K.R. to A.L.R., Dec. 13, 1945) that he has not seen any in that area for several years and is much inclined to think they have been killed off. Any that may be seen there he thinks are animals that have travelled west from the Milk River area.

Area 3

Sevenpersons-Nemiscam-Lucky Strike, Alberta

Estimated population	1,000 antelope
Estimated area	1,800 square miles
Status	doubtful, probably decreasing

This area contains much wheat land as well as much pasture land; several large coulees provide continuous areas of pasture and there are pasture and ranch lands scattered throughout it. The consensus of opinion was that it was not important for antelope range.

The persons interviewed who supplied most of the information were: Mr. A. F. C. Daniel, Lethbridge; Sgt. Graham, R.C.M.P., Medicine Hat; Dr. G. N. Giles, Milk River; Mr. F. Natress, Medicine Hat; Mr. Edwin Mathews, Nemiscam; Constable J. Wilson, R.C.M.P., Foremost. Detailed information follows.

Dr. Giles, who knows the antelope country of the Wildhorse area, drove from Milk River town to Wildhorse via Pendant d'Oreille in mid-September and saw no antelope until he was east of Pendant d'Oreille; he often drives from Milk River to Medicine Hat via Foremost and has seen few antelope in that area. He was inclined to dismiss this whole area as of little importance as antelope range. A. L. Rand, July 26, 1945, on a drive from Manyberries to Lethbridge via Orion, Sevenpersons, and Bow Island saw no antelope; on Sept. 21, 1945, driving from Bow Island to Foremost and return, and to Medicine Hat, saw none; on a drive, Medicine Hat to Lethbridge, Sept. 25, 1945, saw none, nor saw any on a drive from Medicine Hat to Nemiscam via Etzikom on October 6.

Daniel reports none near New Dayton, nor near Warner.

The western limit of the range of the antelope here seems to be about Wrentham (tp. 6, rge. 17), where Daniel reports having seen antelope, and 10 miles northeast of Milk River town (about tp. 3, rge. 15), where Giles reports a band of 3 to 4 seen in summer only.

Giles says that in the 12- to 15-mile stretch along Milk River and north to the vicinity of Lucky Strike and Groton (tps. 2, 3, rges. 10, 12), there were nearly 100 antelope 2 or 3 years ago and that they did not go south of Milk River, and Natress who has hunted coyotes extensively in that area mentioned that the Lucky Strike-Groton area and south to Milk River was rather rolling, smooth, ranching country with a few antelope, and you might see 150 in a day's drive in the autumn. It is this general area that Ridley spoke of as the Birdsholm area, into which he claimed antelope moved from the Black Coulee area south of Milk River. However, Wilson, who knows the Manyberries-Wildhorse antelope area, was of the opinion that west of Pendant d'Oreille, the country that is more farmed than that to the east, has few antelope; and in the area from Legend to Skiff and south to Etzikom Coulee one might see from 15 to 20 in a day.

From Etzikom to Medicine Hat there seem to be very few antelope, though Graham had one complaint of their doing damage to crops west of Wisdom.

East of Lucky Strike, where antelope used to be plentiful, there are now only about 30 that range from there north to Crow Indian Lake.

Along Chin and Fortymile Coulees Natress says in the autumn one can see bands of 40 up to 70 antelope, and might see four or five bands in a day's drive. Mathews at Nemiscam estimated perhaps 300 antelope in a 20-mile radius outside the Nemiscam National Park. In particular, he spoke of one bunch of 40 that summer on Crow Indian Lake and winter in the coulee just west of Nemiscam; a smaller band on Sevenpersons Coulee north of Etzikom; and a band of 6 to 10 northwest of Nemiscam on Fortymile Coulee.

In Nemiscam Park itself there were 30 antelope in October 1945.

Summary of Population. Wheat farming is carried on extensively in this area, and the antelope population probably have their headquarters along Fortymile, Chin, Sevenpersons, and Etzikom Coulees, and along Milk River where conditions are less disturbed.

Compared with the better antelope ranges, this area carried a small population. An estimate of the antelope population might be built up as follows:

South of Etzikom Coulee	500
North of Etzikom Coulee	500
Total	1,000

Locally the antelope are said to be common and the status fairly good compared with previous years. However, Mathews says antelope have decreased 50 per cent in recent years (See under mortality), and Giles said the Lucky Strike-Crow Indian Lake area antelope bands had also decreased.

The migration in this area seems not to be extensive; Ridley reported antelope ranging from Black Coulee south of Milk River to the Birdsholm area; Mathews reports a band of 40 that winter on Chin Coulee near Nemiscam and summer on Crow Indian Lake; and Giles speaks of a small band of 30 that ranges from Lucky Strike to Crow Indian Lake.

Area 4

Bow-Oldman Rivers, Alberta

Estimated population	1,000 antelope
Estimated area	1,300 square miles
Status	probably decreasing

Data are scanty for this area between Bow and Oldman Rivers. Information was obtained from: Mr. Walmark, now of Piapot, Saskatchewan, who for many years lived at the Junction of Bow and Oldman Rivers; Mr. T. E. Randall of Dickson (formerly of Brooks); Mr. J. Orr of Suffield; Mr. F. Natress of Medicine Hat; Cpl. J. K. Ridley, R.C.M.P., of Coutts, formerly stationed at Barons. Detailed information follows.

Walmart said that in 1944 there were about 100 antelope in the seven and one-half townships of land in the forks of the Oldman and the Bow.

At Vauxhall a few winter, according to Orr, and Natress says 30 to 40 would be seen in a day's travel in this area.

South of Bow City (Eyremore) bands of 200 to 300 are said to be seen commonly, according to Randall.

Near Barons, about 1936, a band of 200 was seen by Ridley.

A recent change in status was indicated by Walmart's report. He said that on the seven and one-half townships he knew at the junction of the rivers, there were in 1936 about 2,000 antelope; in 1944 there were only about 100, their number having decreased steadily.

Area 5

Cypress Hills, Alberta

Estimated population	35 antelope (summer)
Estimated area	360 square miles
Status	a marginal population

The Cypress Hills area, partly forest preserve and partly farms though with considerable pasture, is only summer antelope range and few range there.

Mr. J. D. Champion, Provincial Forestry Officer, Elkwater, says that occasionally there are a few on the bench and even into forest glades of the Cypress Hills. On July 1, 1945, he reported a band of 8 near the Ranger Station, and on July 10 Rand saw a band of 11 near there.

Mr. John Nott of Medicine Lodge Valley (upper Lodge Creek) says there are very few there.

Area 6

Manyberries-Wildhorse, Alberta

Estimated population	5,000 antelope
Estimated area	1,300 square miles
Status	good, increasing

This area, south of the Cypress Hills to Milk River and the Montana border, and from the Saskatchewan border west to Lake Pakowki, is largely ranchland and is one of the most important antelope areas in Canada. The southwest part of this area is an important wintering ground, and to it come many antelope from Saskatchewan. Irregular emigrations into Montana are reported.

Information was obtained by interviews from: Mr. G. Armstrong, Elkwater; Mr. J. D. Champion, Elkwater; Dr. G. N. Giles, Milk River (town); Mr. H. Hargrave, Dominion Range Station, Manyberries; Mr. V. W. Heydlauff, Wildhorse; Mr. G. Hillock, Maple Creek, Sask.; Mr. F. Natress, Medicine Hat; Constable J. Wilson, R.C.M.P., Foremost (formerly at Manyberries); Mr. Yates, Customs Officer, Wildhorse; as well as observations by A. L. Rand.

Detailed Data. In the northern part of this area, 10 miles south of Cypress Hills, Champion has seen, in recent autumns, bands of 150 animals, and has had reports of bands of 500 to 1,000 being seen.

Near Manyberries in July Rand had reports of small bands of 4 to 6 animals being seen, and he saw 4 on July 26.

Between Pendant d'Oreille and Manyberries there are said to be fewer antelope than east of Manyberries (Wilson), though on September 15, 1945, Giles, travelling from Pendant d'Oreille to Comroy saw between 200 and 300 animals.

There are said to be few in the immediate vicinity of Comroy due to settlement (Giles), though Rand saw 2 there on July 26.

About the Range Station Hargrave estimated that in a 20-mile radius in July there were 2,000 animals, and reported seeing 200 on a 20-mile drive northeast of the station on July 17, and that in winter he commonly sees bands

of up to 400 individuals. In July Rand found them common about the Range Station; 6 to 25 animals were seen on many days within a few miles of the station from June 13 to 25; and on the 14-mile drive from there to Milk River on July 19, 20, 21, sighted 13 antelope on each trip.

In the Wildhorse area antelope are common in summer and there are great congregations in winter.

In mid-September Giles, on each of 2 days travelling, saw 500 to 600 antelope in the southeast corner of the province, east of Onefour and south of Jaydot. Wilson said that in the Manyberries-Wildhorse area 500 antelope were commonly seen in a day.

Heydlauff says he has seen 500 on his alfalfa field in August and September, and an estimated 3,500 on his ranch (of about 20 sections) in the winter of 1935-36 (many died that winter but they have since increased). In November 1940 Hillock saw 250 on one alfalfa field and 400 on another, and has seen various bands of 800 to 900 in this area 4 or 5 years ago.

In the summer of 1945 Heydlauff says 300 or more were commonly seen on his ranch in a day. On October 3 Rand saw 17 on a 12-mile drive on the Heydlauff ranch. Yates says that from the Customs House on the border at Wildhorse he sometimes in winter sees antelope in lines a half mile long drifting with the storm.

The country up to 40 miles north of the Range Station and north of Jaydot to the Cypress Hills, is rough and practically no one goes there, according to Hargrave, making it a natural antelope preserve. Wilson also says antelope are as common there as they are in the Wildhorse area. Natress, who travelled there in 1935-36, found antelope wintering commonly, and spoke of one band of 1,000 animals. Armstrong, who made a trip of 1½ days in the autumn of 1944 from Cypress Hills to Willow Creek (Sask.) through this country, spoke of seeing perhaps 1,000 antelope.

The consensus of opinion is that antelope are doing well in this area, and have been increasing steadily in recent years.

The Wildhorse area is locally famous for its wintering antelope, the animals coming from Saskatchewan in severe winters, but they also winter north nearly to the Cypress Hills.

Area 7

Elkwater-Hilda, Alberta

Estimated population	120 antelope
Estimated area	1,200 square miles
Status	doubtful

This area of Alberta, east of Medicine Hat and South Saskatchewan River, and north of the Cypress Hills, has much good antelope range, but it is broken up and encroached on by farms. Antelope populations are small and scattered, and apparently these animals do not make seasonal movements.

Information was secured by interviews with: Mr. G. Armstrong, Elkwater; Sgt. Raymond, R.C.M.P., Medicine Hat; Mr. F. Natress, Medicine Hat; Cpl. W. Naylor, R.C.M.P., Hilda. Detailed information follows.

Raymond, speaking of the area generally, says there are practically no antelope in the Medicine Hat-Walsh area, south to the Cypress Hills (evidently scarce, but some occur, *See below*), but north of that there are a few in the Vale-Bowmantown area, perhaps a few dozen, and they increase in numbers as you go north along the river. Just north of the Cypress Hills on the George Armstrong ranch (about tp. 9, rges. 1, 2) there are said to be about 15 antelope, and Mr. Armstrong, who supplied this information, said he knew of three bands to the north each of about 50 animals.

In the Irving area F. Natress reports 10 to 20 animals, and in the Walsh area he estimates 30 to 40 animals, whereas Naylor estimates about 20 to 25.

In the Vale-Bowmantown area, where Sgt. Raymond estimates a few dozen, Naylor says there are 25 to 30 in the Chapis Lake area.

In the sand hill country, in tp. 19, rge. 1, in the north end of this area, are 40 to 50 antelope (Naylor).

Area 8

Suffield-Brooks-Bassano, Alberta

Estimated population	8,000 antelope
Estimated area	4,000 square miles
Status	good, numbers constant

This area, including the Eastern Irrigation District and the British Block, between South Saskatchewan River and Bow River on the south, Red Deer River on the north, and west to Wintering Hills, ranks with the Manyberries-Wildhorse and Milk River areas as one of the most important antelope areas in Canada. The data indicating plentitude of antelope are convincing. Most of this area is now closed to antelope hunting; the E.I.D. has no antelope hunting, and the British Block is closed to all unauthorized personnel, but the Red Deer River area is locally one of the important hunting areas.

Seasonal movements are apparently conspicuous within the area, but the antelope apparently do not leave it. The reported destruction of antelope on the British Block has little foundation in fact.

Information was secured by interviews with: Mr. Alex. Bain, Buffalo; Mr. J. Cardinal, Red Deer; Mr. W. Crooks, Brooks, who also went to considerable trouble to get information from many of the field men working under his direction in the Eastern Irrigation District; Mr. Daniel, Lethbridge; Capt. Gilfoy, Experimental Station, Suffield; Lieut. Gilkes, Experimental Station, Suffield; Mr. T. Kjar, Calgary; Mr. R. Lister, Edmonton; Mr. F. Natress, Medicine Hat; Mr. J. Orr, Suffield; Mr. T. Randall, Dickson (formerly at Brooks with Ducks Unlimited); Sgt. Raymond, R.C.M.P., Medicine Hat; Mr. W. Ward, Cassils; Rand also travelled over some of this country. Detailed information follows.

Western Edge of Range. Occasionally into the edge of the Wintering Hills in summer (J. Cardinal).

Blackfoot Reservation. Bassano-Gleichen occurrence is indicated by T. E. Randall's observation that on his frequent summer railway trips, Brooks to Strathmore, he sees the antelope commonly, in groups from 2 to 4 on the prairie south of the tracks only, nearly to Strathmore. Information from the Indian agent Mr. Godderham at Gleichen is that there are about 50 head on the reserve, and the numbers have not changed for some years.

Eastern Irrigation District. From Bassano and to Duchess and north to Red Deer River there are few animals (W. Crooks). In the triangle Bassano-Duchess-Brooks there are about 90 in three bands.

In the area south and east of Bassano antelope are common, and as many as 150 are seen in a day. In the area south and west of Cassils (about 15 miles west of Brooks) Crooks estimated them as less common, with 6 or 8 being seen in a day, but W. Ward estimated seeing up to 75 in a day's ride from Cassils to Bow River, and Randall said that in the autumn of 1943 he saw a band of 133 antelope at San Francisco Lake (near Cassils). On June 22 to 28, 1945, while camped at San Francisco Lake, A. L. Rand saw 3 or 4 about there daily.

In the Tilley-Patricia area eastward, south to Monogram antelope are common, according to Crooks, and Jack Orr corroborates this, saying that north-east of Tilley to the Red Deer there are quite a few, with bands of 100 to 200 being seen in the winter. Randall says that travelling the Brooks-Tilley area in summer he frequently sees 2 to 20 along the road, and there is a band of about 10 summering around Louisiana Lakes (near Tilley), which was seen by A. L. Rand, June 22, 1945.

Randall says that antelope become more common in this district as one goes south of Brooks toward Bow River, and other data corroborate this, putting the most thickly populated areas west and south of Lake Newell. Crooks says that west of Lake Newell bands up to 50 in number are seen and 100 may be seen in a day, and Daniel says that many are to be seen there in a day. South of Lake Newell, Crooks indicated them as common, and T. Kjar reports seeing 500 in a day in the autumn of 1944.

East of Lake Newell and into the southeast part of the irrigation district, there are a few (Crooks).

East of the Eastern Irrigation District and in the British Block antelope are apparently generally common (Orr).

In the area Redcliff-Brooks-Duchess-Wardlow-Empress are nearly as many antelope as in the Manyberries-Wildhorse area (Natress).

Jenner and Buffalo were said by many people to be good antelope areas, and Cardinal said quite a number were killed south of Buffalo, where in the autumn of 1944 he saw 150 in a day. At Buffalo Alex Bain was interviewed on October 9. He said 50 to 60 antelope could be seen in a day without any difficulty, and that the preceding Sunday (October 7), he saw one band of 7 and another band of 20 on the nearby river flats. He estimated that within 10 miles there could easily be 400 to 500 antelope, and has seen bands of 200 animals along the river valley breaks in winter.

Going southward, Orr says there are quite a few about Tide Lake.

British Block. Capt. Gilfoy and Lieut. Gilkes said antelope were scattered all over the area (September) and in summer one would see 15 to 30 on a 30-mile drive. In winter one might see several bands of 30 to 40 animals. Capt. Gilfoy said at one time there was an estimate of 3,000 to 4,000 antelope on the British Block, but he didn't know how it was calculated.

Sergeant Raymond has flown over the British Block, and saw perhaps 300 to 400 animals; a fair number he thought, but he had no experience of other areas for comparison.

Orr says that many congregate in the southern part of the British Block in winter, and if the coming winter were severe, antelope numbers being what they are, it would be possible to see 5,000 in a day in this area, as he has in former winters. In a severe winter he has seen a band of 500 at Suffield and from Suffield to Tilley a steady stream of antelope (with 1 foot of snow and the temperature at -20° F.).

Lister who was in the southwest part of the British Block June 22 to August 4, 1945, saw many antelope. Bands of 10 to 15 were encountered every few miles, and one band of 200 was reported.

In driving from Suffield to Tilley on September 23, about 40 antelope were seen in a distance of about 30 miles. On two occasions in June, over this same stretch of road, 1 and 2 antelope were seen (Rand).

Status. The consensus of opinion is that the status of the antelope in this section is good. Undoubtedly the agriculture in the Eastern Irrigation District acts against them there, perhaps offset by the complete protection they receive in this area.

Sergeant Raymond, speaking for the whole area, says that the general impression from talking with people is that they are not as common as formerly, but are in good numbers. Natress from first-hand experience thinks that the numbers are about constant and the situation good, and Orr's opinion is the same.

Migration. Apparently the number that summer in this block do not leave it. There is the question as to the antelope north of the Red Deer wintering south of it. Crooks thinks there is little movement on the E.I.D., but Orr with headquarters at Suffield thinks that most of the animals from the British Block

and west at least to Tide Lake may in severe winters move down to along the Canadian Pacific Railway line, and says there is a very heavy concentration in the southern part of the British Block in severe winters. In mild winters, however, this movement is much less noticeable, and they may winter as far north as Tide Lake and west to Bassano.

J. Cardinal and Alex Bain both say that antelope winter along Red Deer River, presumably some of them coming from the south to the river.

Destruction of Antelope on British Block. Locally considerable concern was expressed over antelope destruction on the British Block. It was a closed area and Rand was not on it, but interviews with a number of persons indicated that no destruction of moment had occurred, or was likely to occur.

Area 9

North of Red Deer River, Alberta

Estimated population	2,000 antelope
Estimated area of normal range	3,500 square miles
Status	increase in recent years

The area immediately north of the Red Deer is considered by knowledgeable persons, to be as good antelope country as that south of it, and antelope are said to range north commonly to the latitude of Youngstown, and rarely as far as Sullivan Lake.

Information was secured through interviews with: Mr. Alex Bain, Buffalo; Mr. J. Cardinal, Red Deer; Mr. J. Orr, Suffield; Mr. T. E. Randall, Dickson. Details of data follow.

Cardinal says that antelope are common in summer north to Oyen (where Bain reported having heard of a band of about 60 moving south about Oct. 2, 1945), Cereal, Chinook, Youngstown (Orr says common here in autumn), and Hanna (up to 20 in a bunch at Hanna) (Orr says common here in autumn). Cardinal says they have been reported occasionally in recent years north to Grassy Island Lake, Kirkpatrick Lake, and Sullivan Lake.

Near Steveville, T. E. Randall saw 35 to 40 on May 17. Bain says antelope are common north of Red Deer River near Buffalo, and he has seen them on the north side of Red Deer River west nearly to Steveville. Natress included the country from Wardlow to Empress as good antelope country along with that south of Red Deer River.

Seasonal Movements. Cardinal says their winter range includes both banks of Red Deer River, indicating a southward withdrawal; Bain heard of a band of 60 moving southward near Oyen on Oct. 2, 1945, and says that about Red Deer River, where they occur in summer and winter, they move into the "breaks" (the edge of the river valley) in winter.

History and Status. Bain, who has spent about 50 years in the country near Buffalo, says that many years ago when he was hunting in the winter he saw a band that covered three hills. He said it didn't matter what three hills as in that area they were all alike, and how far he was from them didn't matter, as the distance from which you can see three hills is always the same. But he says the band must have been a mile long and their tracks made a path 50 yards wide. He estimated it must have contained at least 2,000 antelope, and after it had passed, with the half-breed hunters who were following it, there was still antelope left in the country.

Although present numbers are nothing like that, their numbers have been increasing in recent years, he says.

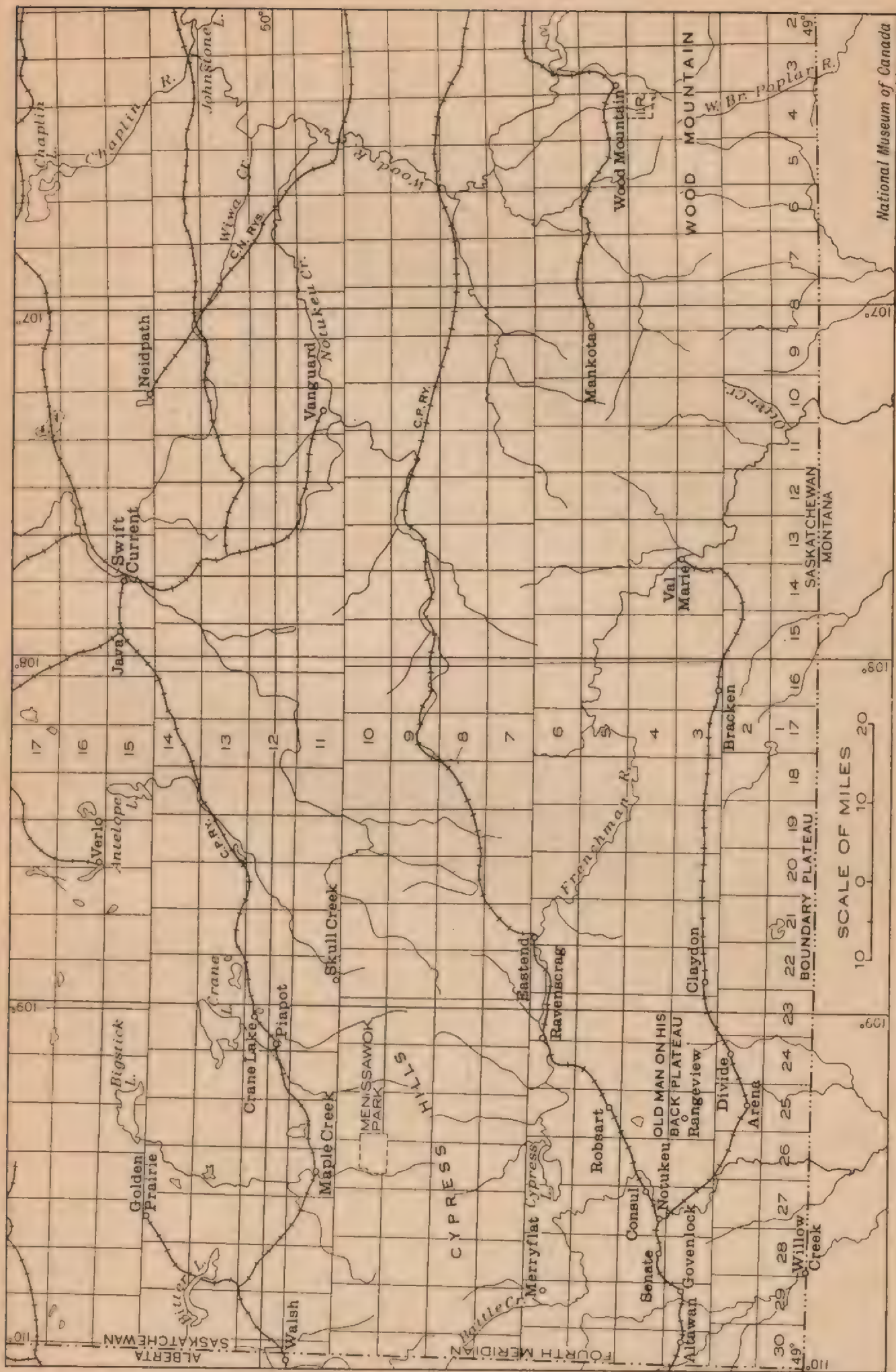


Figure 7. Detailed map of antelope range in southern Saskatchewan for locating places mentioned in the text; townships are numbered vertically, ranges are numbered horizontally (for example, Maple Creek is in township 11, range 26, usually written tp. 11, rge. 26).

*Area 10**Bitter Lake area, Saskatchewan*

There appear to be a small number of antelope on this area, and they stay here summer and winter.

Estimated population	30 animals
Estimated area	48 square miles

Details are as follows.

Mr. Murdy Boyer, who has ridden this country for 3 years, estimated there were only about 30 antelope on the 48 sections of pasture land he covers.

Mr. W. C. Teague tells of seeing a band of about 30 in early September 1945.

*Area 11**Bigstick Lake, Saskatchewan*

Estimated population	1,500 antelope
Estimated area	800 square miles
Status	increasing

Here, in the edge of the Great Sand Hills, where there is a large area of ranch-land more or less surrounded by cultivated land, is a considerable antelope population. They do not move out of the area, but in winter congregate about the east end of Bigstick Lake (i.e., in the southern part of the area). There is a belief put forward by only a few of the local people interviewed, that a few antelope move southward from Saskatchewan River.

Information was secured from observations made by Rand, and through interviews with: Mr. Sam Anderson, Sceptre; Mr. W. J. Beatty, who runs sheep east of Bigstick Lake; Mr. W. H. Martin, sheep rancher northeast of Bigstick Lake; Mr. Murdy Boyer, who rides on a community lease near Bigstick Lake; Mr. C. A. Millie, rancher near Freefight Lake; Mr. W. Thorburn, Sceptre; Mr. W. Hitchcock, Maple Creek. Details follow.

Murdy Boyer said that in the big grazing areas east of Bigstick Lake, over which he rides, there were a considerable number of antelope, and Beatty, who ranches sheep to the east of Bigstick Lake, says they are plentiful there; one may see 200 in a day, and there may be 400 in the area. Martin, who ranches sheep just north and east of Bigstick Lake, says his ranch area and that just to the south is the best antelope country. One day in late September 1945, he saw 100 in several bands. He says they go only a short distance into the Great Sand Hills country to the north, and the country a few miles west is settled and is shunned by antelope.

A. L. Rand, on Martin's ranch on Oct. 8, 1945, under directions of Mr. Martin, located about 80 antelope within a small area about 3 miles south of the ranch house, and in the same day a rider reported 15 some miles to the west.

Millie, whose ranch lies northwest of Martin's, says that on his 40,000 acres he has about 200 antelope. The population is denser to the south and gradually disappears as you go northeast into the Great Sand Hills. To the west is settlement, shunned by antelope; in an open winter they stay on Millie's place all year; in severe winters they congregate about Bigstick Lake. Millie says they are thicker than last year.

A. L. Rand, Oct. 8, 1945, saw 1 antelope a few miles south of Millie's ranch house, and 9 some miles west. Yeast's ranch lies to the north of Millie's, and though antelope decrease in numbers as one goes north, Hitchcock says he has seen as many as 30 in driving from Millie's to Yeast's.

Sam Anderson, whose 15,000 acres lies to the east of Yeast's, says this rangeland is too brushy for sheep, and there are only a few antelope on it, on areas where there are open flats.

Thorburn says there are a few on the north edge of the Great Sand Hills, and they go south to Bigstick Lake for the winter.

Status. Hitchcock says antelope in the Bigstick Lake Country are not one-quarter as plentiful as in the Govenlock area.

Millie says they are thicker than last year.

Boyer says they have increased in the last 3 years, since he has known the country.

The last published estimate of antelope present on this area, in 1924, was 100. There is no open season in this area (1945), and the present estimate of 1,500 antelope indicates a substantial increase.

Migration. Apparently there is a withdrawal from the northern edge of the range in winter, though as far north as Millie's ranch antelope are said to stay in a mild winter. There is a wintering congregation about the eastern end of Bigstick Lake.

Habitat Relationship. The Great Sand Hills themselves are said to be shunned by the antelope, as is the surrounding farm area, they being restricted to the edge of the Great Sand Hills.

Area 12

Empress-Alsask, Saskatchewan

Estimated population	85 animals
Estimated area	450 square miles
Status	decreasing

This area extends from South Saskatchewan River north to near Alsask, and 15 miles east of the Alberta border.

Information was largely from Mr. J. Chapman of Empress, Alberta. Details follow.

Chapman says that in the area he knows, from South Saskatchewan River north to highway 44 (which runs east and west through Eyre and Mantario), and from the Alberta boundary eastward 15 miles, there are only about 85 antelope, and they are decreasing in numbers. They are there summer and winter. The most northerly record was a few seen near Alsask a few years ago.

In the last 5 years, 35 is the most he has seen in one band. About 1934 a band of 500 was counted after a bad snowstorm, and at that time the animals were plentiful.

About this time a large herd was reported going westward, and it never came back, indicating perhaps a permanent exodus rather than a dying off of the population.

Area 13

South Saskatchewan River, Saskatchewan

Estimated population	?
Estimated area	?
Status	poor, decreasing

This area includes grazing land on both sides of the South Saskatchewan, from Leader eastward. Data are scanty and unsatisfactory. Antelope occur, but their numbers and the eastward extension of their range are unknown. It is said to be the hunting grounds of Saskatoon sportsmen.

Information was secured through traverses by A. L. Rand and by interviews with: Mr. S. Anderson, Sceptre; Mr. W. Thorburn, Sceptre.

Thorburn says that on the ranchland of the river edges, which extends back a mile or two on each side, there are a few antelope north of Sceptre, but they are more common toward Empress on the north side of the river. On a lease just north of Sceptre he says one band of 35 and one of 12 have been reported recently, but that they drift in and out. He also says Saskatoon antelope hunters are in this area each year, camping on the river north of Leader and hunting from there to Empress.

Thorburn says the antelope seem to have decreased in the last 4 or 5 years, and attributes this to hunting.

Sam Anderson also said there were antelope on the river north of Sceptre, that they have decreased in recent years, and that they go south to Bigstick Lake for the winter.

A rider on the sheep ranch north of Abby said none was there, but that they occurred north of the river. Rand visited this area north of Abby and thinks that a moderate antelope population might survive along the uncultivated river breaks, but farm lands encroach heavily on it and he is of the opinion that a large antelope population is not to be expected.

Status. Uncertain, but apparently poor. Both informants say decrease, as is the report for the adjacent Empress area.

History. Nelson in 1925 reported about 40 antelope in this area, west of Owensville. It would seem that they increased with protection, then are decreasing under hunting.

Area 14

Maple Creek-Walsh-Cypress Hills, Saskatchewan

Estimated population	1,000 animals
Estimated area	400 square miles
Status	good, increasing

Data were secured chiefly from Mr. Hillock, Maple Creek. Details follow.

Hillock says that in the country from the northern edge of the Cypress Hills north of the Maple Creek-Walsh highway (Highway No. 1) and between the Alberta boundary and Highway No. 21, running south through the Cypress Hills, antelope are common in summer. He has seen several hundred in travelling it, and says there may be a thousand there. He also says that these antelope move southward through the breaks in the hills to winter south of the Cypress Hills. He thinks they are increasing.

Teague tells me he saw 3, blinded by car lights, on the Maple Creek-Medicine Hat road this (1945) summer.

Area 15

Maple Creek-Piapot-Cypress Hills, Saskatchewan

Estimated population	36 animals
Estimated area	360 square miles
Status	a marginal population

This area, from Maple Creek and Piapot south to the Cypress Hills contains a small marginal population, probably largely seasonal in occurrence.

Most of the data were secured by interviews with: Mr. M. Hitchcock, Maple Creek; Mr. J. A. Walmark, Piapot; and a letter from Mr. S. A. Mann, Skull Creek.

Hitchcock says that in the east block of the Cypress Hills, tp. 9, rges. 24-25, there is no regular antelope population, although occasionally 2 or 3 drift in, in the spring of some years. On the area formerly known as Menissawok Park (16 sections in parts of tps. 9, 10, rge. 26, W. 3rd mer.) he says there is a bunch of 24 antelope in summer.

Walmark, who ranches south of Crane Lake, in his riding this summer has seen the same band of 7 animals several times, apparently all that occur.

Mann says there are about 18 on his ranch near Skull Creek; they have increased in numbers in recent years.

Area 16

Val Marie-Govenlock-Cypress Hills, Saskatchewan

Estimated population	5,000 antelope
Estimated area	3,600 square miles
Status	good, increasing

This area, from the Montana border north to the Cypress Hills, and from Alberta east to where the Whitemud (or Frenchman) River crosses the International Boundary, is the important antelope area in Saskatchewan. Apparently much of it is only summer range, and some of the animals from this area spend the winter in Alberta. In general it is less important than either the Manyberries-Wildhorse, or the Suffield-Bassano-Red Deer River area of Alberta.

Data were obtained from a survey by Rand and through interviews with: Mr. W. Boyd, Maple Creek; Mr. H. Brontzki, Consul; Mr. Darling, Divide; Mr. Delmonte, Divide; Miss E. Goff, Senate; Mr. N. Gunther, Merryflat; Mr. Hanson, P.F.R.A. pasture, Arena; Mr. G. Hillock, Maple Creek; Mr. M. Hitchcock, Maple Creek; Mr. C. Hogg, Willow Creek; Mr. W. Hyam, Claydon; Mr. B. Linder, Maple Creek; Mr. Lindstrom, Divide; Mr. A. McRae, Govenlock; Mr. G. R. Sexsmith, Regina; Mr. Sherman, Divide. Details follow.

Hillock, who knows the country from the Alberta boundary to where the Whitemud (Frenchman) River crosses the International Boundary and north to the Cypress Hills supplies this summary:

Antelope are common in southwestern Saskatchewan east to south of Arena (range 25), becoming scarce eastward. In the country about Val Marie the animals are fairly common, but in the country Val Marie to Mankota and south to the border there are only a few.

The northern limit of their range is the edge of timber in the Cypress Hills, east to just north of Ravenscrag then south to Claydon, then east to near Bracken, and then some miles north of Bracken to near Mankota and south to the border.

In summer antelope spread out all over this range; most common in the western part east to Arena, scarcer eastward.

In winter there is a withdrawal from the northern and eastern limits, with largest concentration in the Battle Creek area near the United States, and in the Govenlock-Wildhorse area. In a mild winter some stay in the Val Marie area, though most move west to Battle Creek and Govenlock areas, and some winter in south edge of the Cypress Hills, perhaps a recent habit.

Sexsmith also has travelled much of this country on land inspection since 1910, and gave information that correlated well with the above. He said the home of the antelope was the stretch of country 24 miles wide along the border from range 20 to 26, and a stretch 36 miles wide from range 26 to 30, though he has seen antelope (4 or 5 this summer) in tp. 8, rge. 13, W. 3rd mer., about 30 miles north of Val Marie. The extreme limit of their eastern range would be where Whitemud (Frenchman) River crosses the International Boundary in range 10. Very few are seen beyond.

It is advisable to consider this area section by section.

A. Lower Frenchman-Val Marie area. Hillock says that in crossing the rough country from near Val Marie west to Bracken and north to Frenchman River he saw 50 to 60 animals this spring (1945).

B. In the rough country from Val Marie to Mankota and south to the border there are very few antelope, according to Hillock, who saw only 12 to 15 in crossing it this spring. A few years ago he said there was none in this area, indicating an increase and spread. Mr. Sexsmith saw 4 or 5 in tp. 8, rge. 13, W. 3rd mer., about 30 miles north of Val Marie, and says that about range 10, W. 3rd mer., where the Frenchman crosses the border, is almost the eastern limit of their range and there are very few beyond.

C. In the country south from Bracken to Claydon to the border (tps. 1-3, rges. 16-22, W. 3rd mer.) antelope are not common (Hillock, Sexsmith). Sexsmith said that in 3 or 4 days this summer, in tp. 1, rge. 18, W. 3rd mer., he saw only one, and in several days in early September, on tp. 1, rges. 20, 21, he saw none. The country from Eastend to Boundary Plateau is mostly farms, he says, and unlikely to harbour many antelope. South of Claydon, on tp. 2, rge. 22, Rand interviewed the farmer, W. Hyam, who told of a band of 14 antelope there this summer. Hyam also spoke of a lease on tp. 1, rge. 22, W. 3rd mer., on which there were many antelope eating the grass that should be for the cattle. Rand visited this lease, October 2, and interviewed a rider, Mr. Sherman, who was just coming off the lease. He said that that morning on the lease he had seen several bands of 1 to 5 antelope. Further, he stated, the bands increased in winter to hundreds of individuals, wintering there when the season was mild, whereas in bad winters they go farther west. Rand and Sexsmith drove about a distance of 16 miles covering the 36 square miles of the lease, and saw only 5 antelope (1 lone animal and one band of 4).

D. This area, south of the Cypress Hills to the border, and from Alberta east to Ravenscrag and Divide, is the best antelope country in Saskatchewan. Even here there are areas that are blank, perhaps due to settlement, and areas from which the animals withdraw in winter.

In the eastern edge of this area, for tp. 1, rge. 23 (mixed pasture and wheat land), Mr. Delmonte of Divide says there are very few antelope in this immediate area, and Mr. Lindstorm of Divide, speaking of tp. 1, rge. 24, W. 3rd mer. (wheat land and pasture), says there are only a few about and that is in summer. Sexsmith says tps. 1-4, rges. 20-26, W. 3rd mer., to tp. 6, rge. 30, is the home of the antelope. For tp. 1, rge. 24, in a large pasture, antelope are common on the community lease, and increasing. He has a place on tp. 3, rge. 24, and has seen a band of 55 there; and he says antelope are common on pasture lands on Old Man on His Back Plateau.

Sexsmith says that in tp. 2, rge. 25, this spring he saw many antelope all along the roads, but when Rand and Sexsmith covered this area in October none was seen, indicating an autumn withdrawal; Sexsmith also said south of Robsart to Arena and Divide (tps. 1-3, rges. 22, 26, W. 3rd mer.) he saw them frequently in May and June 1945, in bands of 2 to 5 animals.

In tp. 1, rges. 25, 26 (south of Arena), which is all pasture land, Rand and Sexsmith drove about 16 miles on October 4, and saw about 69 antelope scattered over the area. Mr. Hanson who is in charge of that pasture area says that with the snowstorm of late September this year (about 10 days before) a band of 150 was seen on this pasture, and that in mild winters some stay here. Last winter a band of about 100 wintered south of Old Man on His Back Plateau, and there were a few other small wintering bands, but in bad winters all leave, drifting westward. This spring there might have been 1,000 on an area of crested wheat grass in the pasture. Mr. Hanson said that only in the last few years had they spread north of the railway tracks (i.e., north of Arena).

Moving westward, the next bit of this area for which we have data is that about Govenlock. It is into this area that antelope are said to move in winter, from as far east as Val Marie and as far north as the Maple Creek-Walsh area.

Govenlock. This is the antelope hunting centre for Saskatchewan. On both mornings Rand stopped there, October 3 and 4, antelope were visible from the hotel. On a motor trip of about 9 miles from Govenlock to the Alberta border via Altawan about 29 antelope were seen, or about 3 antelope to the mile. McRae estimated that there were perhaps 500 antelope near Altawan.

Rand also made a motor trip from Govenlock south to Willow Creek and saw 14 animals near Willow Creek. At Willow Creek Mr. C. Hogg, Customs

Officer, said he sees them in bands of 5 to 25 about the Customs station and there were regularly bands on each side of it (east and west). In February 1937 he counted one band of 700, and said that this is not unusual in winter there.

Mr. McRae estimated there might be 400 in the area about Willow Creek.

At Govenlock bands of 5 or 6 are common in summer, and in October bands of 25 are common. They winter commonly in the creek just north of Govenlock, and in the 1930's 500 wintered there within a few miles of town. McRae says they have increased steadily in the last few years. There is a westward drift from here into the Wildhorse area, Alberta, perhaps influenced by hunting.

North of the Govenlock area, on tps. 5, 6, rge. 28 (near Battle Creek north of Senate), Sexsmith reports seeing 50 in May 1945, and between there and Govenlock frequently saw individuals. Mr. Brontzki of Consul, who farms in tp. 4, rge. 28, W. 3rd mer., said there were as many as 75 antelope on his area in September 1945.

Miss Eve Goff, whose ranch is on Battle Creek about 9 miles north of Senate (tp. 5, rge. 28) says antelope are very plentiful on her place, but in a bad winter they all leave, in mild winters they stay. In summer they are in bands of 4 or 5, in winter bands of 40 to 50. Rand saw 6 near the ranch house and 3 a few miles north (October).

Merryflat. Norman Gunther who rides this area says that in October bands of 50 are to be seen, and one would see several such in a day's ride. After the storm of late September of this year (1945), antelope came streaming south from the Cypress Hills. They move out of this area in winter.

West of Merryflat, near Battle Creek, there is a wintering population of hundreds, according to Hillock. Probably referring to this same population, B. Linder, who had a ranch near Battle Creek, says as many as 500 to 800 winter right about his place.

Boyd, who ranches to the north, tp. 7, rge. 28, says he is right against the Cypress Hills, and had about 50 antelope on his place this summer, but said they go south with the first storm.

For the area Cypress Lake to Ravenscrag I have little precise data, but antelope are said to occur (Hillock), though there are few in the area immediately north of Ravenscrag (Hitchcock).

The consensus of opinion is that the antelope are increasing in this area, and they are increasing not only their summer range eastward into the Val Marie area, but also are wintering farther north, on the south slopes of the Cypress Hills. Probably it is from this population that antelope, estimated at 1,000, come to spend the summer just north of the Cypress Hills.

More complaints were heard from farmers in regard to antelope damage in this area than in the best antelope areas in Alberta.

This country generally is flatter and easier to travel over by car than the Manyberries-Wildhorse area, and is well known as an antelope hunting area. It has been suggested that this has been influential in causing antelope to move westward in winter, into the rougher parts of adjacent Alberta where they are less disturbed.

In making up an estimate that is little more than an index, it is necessary to take account of individual reports and estimates that serve better for an index than does the gross estimate. Perhaps the most significant in showing abundance are the 500 to 800 reported wintering on upper Battle Creek (partly from north of Cypress Hills?); 700 seen in one band at Willow Creek; 500 estimated near Altawan; bands of 40 to 50 reported from many places in area D; 1,000 on a grass field near Arena; hundreds reported here and there. The total estimate of 5,000 is probably conservative.

Area 17

Northeast of White Bear Lake, Saskatchewan. No recent data. Nelson, 1925, reports about 20 antelope.

Area 18

Between White Bear and Lucky Lakes, Saskatchewan, some distance north of the South Saskatchewan, 12 antelope were reported by Nelson, 1925, but there are no recent data.

Area 19

Near Long Valley, northwest of Lake Chaplin, Saskatchewan, a band of about 10 was reported by Nelson, 1925, but there are no recent data.

Area 20

On Saskatchewan River a few miles west of Saskatchewan Landing, Saskatchewan, a band of 8 was reported by Nelson, 1925, but there are no recent data.

Area 21

On the north side of Frenchman River near Eastend, Saskatchewan, Nelson, 1925, reported 27 animals. Recent data do not include this in regular present day antelope range.

Area 22

South of Wood Mountain, Saskatchewan, Nelson, 1925, reported 40 animals; present data indicate antelope do not regularly range that far east.

Area 23

Peigan Indian Reserve, Alberta. This is outside the regular present day antelope range, and my only data on occurrence there are through Mr. D. J. Allen of the Indian Affairs Branch who writes that a report has been received from Mr. McMillan, Indian agent at Brocket, Alberta, to the effect that antelope have not been seen in the neighbourhood of the Peigan Reserve since 1936, when a few were noted crossing the reserve going in a westerly direction.

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